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SOV/126-8-1-18/25

# Study of the Plastic Properties of Monocrystals of Beryllium. II.

ments were carried out under conditions of compressive deformation on a special press (Ref 6) at a constant deformation rate (0.03 mm/sec) at temperatures of -253, -196, 20, 400, 600 and 800°C. The specimens were orientated in such a way that the basal plane (0001) made an angle of  $45 \pm 1.5^\circ$  with the axis of the compressive forces (Fig 1). The side face of the specimen was parallel with the crystallographic plane of the primary prism (1100) and subsequently also parallel to the primary diagonal  $[1120]$ . The metallographic and X-ray methods used for the studies have been described earlier by Garber et al. (Refs 1,7). Indexing of the exposed elements of plasticity and fracture was carried out according to the traces of deformed bands and cracks on previously polished specimen faces. The results were plotted on a standard stereographic projection of the basis plane of the crystal. An X-ray analysis method was used for the orientation of specimens and for the supplementary control of elements of slip and fracture. The structure of the bands of basal slip was studied also electronmicroscopically. In Fig 2 traces of slip occurring in monocrystals of beryllium at

Card 2/5

6690/

SOV/126-8-1-18/25

Study of the Plastic Properties of Monocrystals of Beryllium. II.

various temperatures are shown schematically. Photo-micrographs of the surface of specimen faces after compression at 20°C are shown in Fig 3a and b and the micro-interference picture of the relief of these surfaces in Fig 3b and 2. The slip bands have been resolved electronmicroscopically as slip packets. At -196 and +20°C the thickness of the packet is the same, namely 0.1-0.3  $\mu$  (Fig 4). The magnitude of slip can be estimated from the displacement of a scratch intersecting the trace of the slip band in a type-b face (Fig 5). In Fig 6 compression curves for monocrystals of beryllium (curves for various slip temperatures along the abscissae axis) are shown. 1 mm along the abscissae axis corresponds to 60  $\mu$  deformation; 1 mm along the ordinate axis corresponds to a load of 18 kg. Fig 7 shows the temperature dependence of the mechanical characteristics of monocrystals of beryllium:  $\sigma_y$  - yield stress in compression;  $\sigma_b$  - UTS in compression;  $\delta$  - total residual compression;  $\delta_s$  - residual compression prior to the appearance of the first slip bands. Fig 8 shows the prismatic slip in monocrystals of beryllium: a - slip trace in a type-a face. Compression at 20°C by

Card 3/5

6690/  
SCV/126-3-1-18/25

Study of the Plastic Properties of Monocrystals of Beryllium. II.

1.2%; X 10 000; b - trapeze-like slip trace in a type-a face. Compression at 400°C by 1.5%, X 432. Fig 9 shows photomicrographs of cross-sectional microcracks formed as a result of non-uniformity of shift in the slip along the slip bands. Fig 10 shows slip traces of a polygonized monocrystal of beryllium. The slip planes are wavy; polygonization blocks can be seen. The treatment consisted in compression by 0.6% at 20°C, annealing at 800°C for 3 hours, followed by repeated compression by 0.8% at 20°C, X 8000. The table on p 137 shows the crystallographic elements of slip, twinning and fracture and the temperature region in which they occur. Fig 11 is a standard stereographic projection of the basal plane (0001) of a monocrystal of beryllium. The orientation of monocrystals of beryllium is shown in Fig 12. The authors arrived at the following conclusions:

1. The essential aspect of plastic deformation of beryllium in a wide temperature range (-196° to +800°C) is slip along the base (0001) in the direction  $[11\bar{2}0]$ .

Card 4/5 The slip in beryllium differs fundamentally from that in

6690/

SOV/126-8-1-18/25

Study of the Plastic Properties of Monocrystals of Beryllium. II.

other hexagonal crystals. Beryllium has a large number of different crystallographic twinning systems. Mechanical twinning is not responsible for the great brittleness of beryllium. Re-forming of twins within an entire crystal leads to an increased plasticity and strength of the crystal in subsequent slip. An unevenness in movement along basal slip planes has been observed. This causes the formation of microcracks along prism and secondary pyramidal planes. Thus the brittleness of beryllium is associated with a large number of cleavage planes which are exposed particularly strongly because of the non-uniformity of slip at low temperatures.

There are 12 figures, 1 table and 13 references, 8 of which are Soviet and 5 English.

ASSOCIATION: Fiziko-tehnicheskii institut AN UkrSSR  
(Physico-technical Institute, Ac.Sc., UkrSSR)

SUBMITTED: December 24, 1957

Card 5/5

24(2)

AUTHORS: Garber, R. I., Gindin, I. A., Shubin, Yu. V. SOV/56-36-2-5/63

TITLE: The Slipping of Beryllium Single Crystals at Low Temperatures III  
(Skol'zheniye monokristallov berilliya pri nizkikh temperatura'kh  
III)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959,  
Vol 36, Nr 2, pp 376-384 (USSR)

ABSTRACT: This paper is a continuation of parts I and II (Refs 1, 2), in which the authors had investigated slipping along the basis plane (0001) of technically pure beryllium single crystals (99.7%) at various temperatures. The investigations described here were carried out with purer Be single crystals (99.98%) at 77 and 20°K. Further, slipping on (0001) under the influence of a deforming force forming an angle of 45° with the plane (0001) was investigated. The direction of displacement in the case of basic slipping was parallel to the lateral face of the investigated crystal - the diagonal of first order [1120]. Deformation was brought about by means of a machine which was especially constructed for operation at low temperatures (Refs 3, 4); the rate of deformation was 0.03 mm/sec. The character of slipping was found to be highly dependent on

Card 1/3

The Slipping of  
Beryllium Single Crystals at Low Temperatures III

SOV/56-36-2-5/63

the stage of deformation. In the case of weak deformations, there is no immediate slipping along the strips, and displacement occurs in a thin layer resting against the strips. Thus, the part of the crystal between two strips is displaced as a whole. Residual stress causes elastic displacement of the opposite sign in the crystal layers resting against the strips. In the case of strong pressure slipping takes place along the strip, and strong relative displacement occurs. The formation of a saw-shaped profile of the crystal face is characteristic of this stage; this may, according to reference 8, be looked upon as a result of twinning on planes with large indices in the case of basic slipping. The discontinuity of displacement is explained as being due to the existence of impurities. Purification of the beryllium contributed towards rendering the course of displacement along each strip more continuous, which leads to a higher degree of plasticity. At 77°K the formation of whole packets of strips can be observed, which is very clearly shown by figure 7. The method of building up the face profile of deformed crystals makes it possible to determine the basic dimensions of the fine structure of the elementary slipping strips and of the packets. The twist noticeable between the

Card 2/3

The Slipping of  
Beryllium Single Crystals at Low Temperatures III

SOV/56-36-2-5/63

strips can, in the first stage, be considered to be due to residual stress; this twist, which increases with deformation, must necessarily be explained in the advanced stage, when it attains  $30^\circ$ , as a result of twinning. In conclusion, the authors thank I. M. Fishman for constructing and producing the replicas and for making electron-microscopical recordings. There are 9 figures, 1 table, and 13 references, 10 of which are Soviet.

ASSOCIATION: Fiziko-tekhnicheskiy institut Akademii nauk Ukrainskoy SSR  
(Physico-Technical Institute of the Academy of Sciences,  
Ukrainskaya SSR)

SUBMITTED: July 16, 1958

Card 3/3

20798

24 7500

1143, 1160, 2807, 1418

S/181/61/003/003/024/030  
B102/B205

AUTHORS: Garber, R. I., Gindin, I. A., and Shubin, Yu. V.

TITLE: High strength of single crystals

PERIODICAL: Fizika tverdogo tela, v. 3, no. 3, 1961, 918-919

TEXT: Numerous experimental studies of crystals of rock salt and other substances, performed by A. F. Ioffe and A. V. Stepanov, seem to indicate that the continuity of the crystals is disturbed in plastic deformation. By retarding or accelerating the plastic deformation of rock crystal, Stepanov was able to change their strength by a factor of 30. The highest strength is displayed by filament crystals if the entire process of deformation up to destruction is plastic. Iron filaments elastically deformed by 4.8%, for example, reach a strength of 1340 kg/mm<sup>2</sup>. When the first indications of sliding are noticeable, the resistance of filament crystals to resistance decreases rapidly. If the orientation of a macroscopic crystal toward the external force is such that plastic deformation (chiefly sliding and twinning) is excluded, increased strength can be expected. Hexagonal crystals which have a limited number of slip and twinning planes at low temperatures, are partic-

Card 1/3



20798

S/181/61/003/003/024/030

B102/B205

High strength ...

ularly suitable for such experiments. Plastic deformation of these crystals is effected chiefly by sliding in the basal plane (0001), on the faces of prisms of first order  $\{10\bar{1}0\}$ , and by twinning in the planes  $\{10\bar{1}2\}$ . This was studied with the help of prismatic Be single crystals ( $1.6 \times 1.5 \times 3$  mm) of 99.9% purity. The crystals were compressed at 77°K by a force perpendicularly acting on the basal plane (deformation rate: 0.013%/sec). There were no indications of plastic deformation up to destruction. Sliding and twinning were impossible since no components of this force were acting in the respective directions. Under these conditions, the Be single crystals actually showed a very high strength: destruction occurred only under a pressure of 410 kg/mm<sup>2</sup>; the crystal suddenly decomposed into very fine powder. With other positions of the basal plane, destruction occurred already at 34 kg/mm<sup>2</sup>. At room temperature, the maximum stress is only 210 kg/mm<sup>2</sup> (perpendicular to the basal plane). Similar experiments were carried out with calcite single crystals ( $6 \times 4 \times 10$  mm) at 300°K, which are deformed only by twinning. The orientation of the single crystals was such that the twinning plane (110) formed an angle of 45° with the axis of the specimen and the direction of displacement  $[001]$ , opposite to the direction in which the tangential stresses acted, which deformed the specimen at a

Card 2/3

20798

S/181/61/003/003/024/030  
B102/B205

High strength ...

rate of 0.004%/sec. A strength of 23 kg/mm<sup>2</sup> was attained in this case. The lower bound is 40 g/mm<sup>2</sup>. There are 7 references: 4 Soviet-bloc and 3 non-Soviet-bloc.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN USSR Khar'kov (Institute of Physics and Technology, AS UkrSSR, Khar'kov)

SUBMITTED: August 10, 1960

Card 3/3

22051

S/181/61/003/004/017/030  
B102/B214

24.7500 1160, 1136, 1143

AUTHORS: Garber, R. I., Gindin, I. A., and Shubin, Yu. V.

TITLE: Orientation dependence of the slipping and rupture of single crystals of beryllium on stretching

PERIODICAL: Fizika tverdogo tela, v. 3, no. 4, 1961, 1144-1151

TEXT: The present paper, which is in continuation of earlier investigations, makes a contribution to the clarification of the structural rules of beryllium which is highly anisotropic with respect to its mechanical properties. The single crystals studied were bred from a 99.98% pure starting material, using the method of slow cooling of the melt (crystallization rate: 5 mm/hr). Single crystals of 80 mm length and 60 mm diameter were obtained. The orientation was determined by X-rays. The crystals were cut in different forms by a special electro-spark device, after which they were etched, ground, and polished, first chemically and then mechanically. The tensile tests were made at the following angles to the basal plane:  $\alpha = 0, 5, 10, 15, 20, 26, 45, 70$ , and  $90^\circ$  (see Fig. 2). The shearing direction  $[11\bar{2}0]$  coincided with one of the lateral faces.

Card 1/5

22051

S/181/61/003/004/017/030  
B102/B214

Orientation dependence ...

The stretching was done at a constant rate of 0.005%/sec at room temperature. The crystallographic elements of plasticity and rupture were studied by crystallographic and microinterference methods. The results of the investigations are illustrated in Figs. 3 and 4. The curve  $P_{\beta}$

(Fig. 3) shows the  $\alpha$ -dependence of the ultimate strength. The strongly non-monotonic behavior of this curve contradicts the law of constancy of normal stress on brittle rupture. The curve  $P_{2\beta}$  is drawn according to

this law and does not represent the experimental facts in any way. The experimental curve  $P_{\beta}(\alpha)$  can be described well by the equation

$P_{1\beta} = K(\sin^3 \alpha \cos \alpha)^{-1/2}$  in the angular range  $\alpha = 20-70^\circ$ , where  $K = 3 \text{ kg/mm}^2$ .

This equation corresponds to the law  $(\tau\sigma)_{\text{destr}} = K^2$ . However, the experimental results do not correspond to this law between 0 and  $15^\circ$ .

At  $\alpha > 20^\circ$  slipping and rupture occur in the same system of planes, namely, (0001). At  $\alpha < 20^\circ$ , the crystallographic elements of plasticity and rupture alter and do not coincide (slipping:  $\{10\bar{1}0\}$ ; rupture:  $\{11\bar{2}0\}$ ). Further, investigations of the structure were made before and after the

Card 2/5

22051

S/181/61/003/004/017/030  
B102/B214

Orientation dependence ...

rupture. The following conclusions are drawn from the results obtained: Highly pure Be single crystals and commercially pure crystals show marked anisotropy in their mechanical properties as well as in the elements of plasticity and rupture on stretching. There is an orientation limit which is characterized by the plasticity at room temperature. The peculiarity of rupture at this orientation is the absence of ideal cleavability and a complicated character of the fracture. Improved plastic properties of polycrystalline Be are obtained by preparing a definite fine-grained texture for which, in the process of deformation, the cleavage in the principal planes of rupture is strongly localized. There are 7 figures and 14 references: 4 Soviet-bloc.

ASSOCIATION: Fiziko-tehnicheskii institut AN USSR Khar'kov (Institute of Physics and Technology, AS UkrSSR, Khar'kov)

SUBMITTED: August 1, 1960

Card 3/5

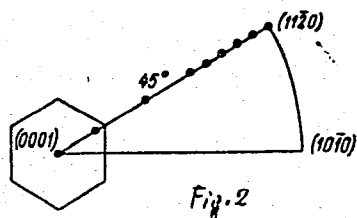
X

22051

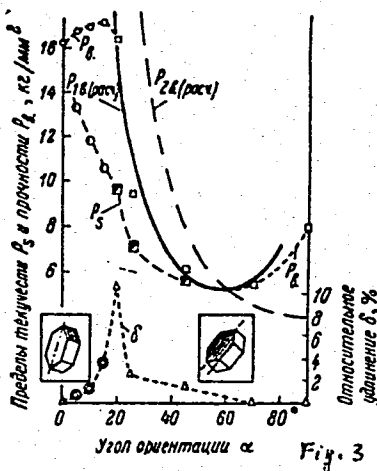
S/181/61/003/004/017/030

B102/B214

Orientation dependence ...



Legend to Fig. 3: Dependence of the creep strength  $P_s$ , the ultimate strength  $P_\beta$ , and the relative elongation per unit length on the orientation of the sample.



Card 4/5

22051

S/181/61/003/004/017/030  
B102/B214

Orientation dependence ...

Legend to Fig. 4: Orientation dependence of the critical shearing stresses (1) in the planes  $\{10\bar{1}0\}$  and  $\{0001\}$  at the moment of slipping ( $\tau_s$ ) and on rupture ( $\tau_R$ ).

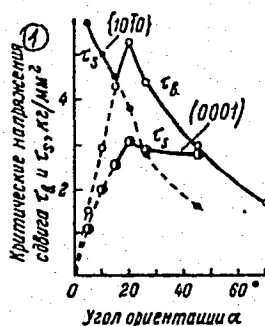


Fig. 4

Card 5/5

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30456

S/126/61/012/003/016/021  
E193/E135

AUTHORS: Garber, R.I., Gindin, I.A., and Shubin, Yu.V.  
TITLE: Tensile tests on beryllium single crystals in the  
20-500 °C temperature range. V.  
PERIODICAL: Fizika metallov i metallovedeniye, vol.12, no.3, 1961,  
437-446  
TEXT: Scarcity of data on the behaviour of beryllium single  
crystals under tensile stresses prompted the present authors to  
undertake the study of this subject. The experimental specimens  
were prepared from 99.98% pure Be by a pulling-out technique.  
The orientation of the single crystal tensile test pieces is shown  
in Fig.1, where  $p$  indicates the direction of the applied stress.  
A strain rate of 0.005%/sec was used in the tensile tests carried  
out at 20, 200, 400 and 500 °C, helium being employed as the  
protective atmosphere at elevated temperatures. The mechanical  
tests were supplemented by metallographic examination. The results  
of the mechanical tests are reproduced graphically. In Fig.2, the  
UTS and the yield point ( $p_b$  and  $p_s$ , kg/mm<sup>2</sup>, left-hand scale)  
Card 1/ 6



30456

Tensile tests on beryllium single ...

S/126/61/012/003/016/021  
E193/E135

and elongation and reduction of area ( $\delta$  and  $\psi$ , %, right-hand scale) are plotted against the test temperature ( $^{\circ}\text{C}$ ). The fifth curve shows the temperature-dependence of the so-called "diffusion deformation" factor,  $\chi$ , which is given by  $\chi = (1 - \varphi) 100$   $^{\circ}\text{C}$ , where  $\varphi$  denotes the deformation localised in the slip on the basal plane, its magnitude being calculated from

$$\varphi = \frac{\sum_i n_i a_{si}}{(\Delta l)_s}$$

where  $n_i$  is the number of basal slip bands with the absolute slip displacement of  $a_{si}$ , and  $(\Delta l)_s = \Delta l \cos 45^{\circ}$  represents the strain of the specimen in the direction of slip. Fig.2 shows the true tensile stress/elongation curve for beryllium single crystals at temperatures indicated by each curve. The effect of temperature on the mode of slip is illustrated in Fig.4, showing (X 200) slip lines on the faces of specimens extended (from left to right) at 20, 200 and 400  $^{\circ}\text{C}$ . The variation of the mode of slip with rising temperature was also studied by determining the magnitude of the

Card 2/ 6/

30456

Tensile tests on beryllium single .... S/126/61/012/003/016/021  
E193/E135

relative slip,  $\gamma$ , and density of the slip bands,  $\rho$ , these two parameters being given by  $\gamma = b/a_s$  and  $\rho = 1/h$  (for the meaning of  $b/a_s$  and  $h$  see Fig.1). In the regions of uniformly distributed slip lines,  $\gamma$  increased from 0.4 at 20 °C to 2.0 at 500 °C; in the region of macroscopically localised slip, at 400 °C,  $\gamma$  reached 70. The parameter  $\rho$  also initially increased with temperature, reaching a maximum of 0.12  $1/\mu$  at 200 °C after which it decreased again, reaching at 400-500 °C a value similar to that at room temperature ( $\sim 0.3$   $1/\mu$ ). Analysis of the results of mechanical tests, correlated with the examination of slip bands and microstructure of specimens after fracture, led to the following conclusions. 1) Plasticity of Be single crystals increases monotonically with rising temperature, showing no peak at 400 °C which is a characteristic of polycrystalline beryllium. The increase in plasticity in the 20-200 °C range is caused by the formation of new slip bands with the material within the bands hardening at a sufficiently fast rate. The increase in plasticity at higher temperatures is associated with the onset of localised slip, characterised by a

Card 3/ 64

30456

Tensile tests on beryllium single ...

S/126/61/012/003/016/021  
E193/E135

large magnitude of  $\gamma$  (about 70). Both UTS and the so-called strain-hardening modulus  $\bar{D}$  passed through a maximum at 200 °C;  $\bar{D}$  is given by  $\bar{D} = (p_u - p_s)\delta$ , where  $p_u$  is the true UTS of the metal. This effect is a manifestation of the simultaneously occurring processes of strain-hardening and relaxation. X

2) Deformation of Be single crystals with an orientation as illustrated in Fig.1 takes place mainly by slip along the basal planes (0001) in the  $[11\bar{2}0]$  direction. At higher temperatures, prismatic slip along the  $\{10\bar{1}X\}$  plane in the general  $[11\bar{2}0]$  direction and diffusion deformation play an increasingly important part.

3) Brittleness of Be single crystals at room temperature is caused by non-uniform plastic deformation along the basal plane which causes the formation and growth of cracks along the main cleavage plane. At high temperatures, slip becomes more uniform and deformation takes place partly by prismatic slip.

There are 10 figures, 1 table and 1 Soviet-bloc reference.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN USSR  
(Physicotechnical Institute, AS Ukr.SSR)

SUBMITTED: January 2, 1961

Card 4/6

GARBER, R.I.; GINDIN I.A.; SHUBIN, Yu.V.

Compression of beryllium single crystals along the hexagonal axis  
in the temperature range  $4.2^{\circ}$  to  $900^{\circ}$  K. Fiz. tver. tela 5 no 2:  
434-442 F '63. (MIRA 16:5)

(Beryllium crystals)

(Strength of materials)

40307-16 137(6) JOANC  
ACC NR: AP6017310 (N) SOURCE CODE: UR/0126/66/021/005/0774/0778  
AUTHORS: Gindin, I. A.; Neklyudov, I. M.; Finkel', V. A.; Shubin, Yu. V. 6P  
ORG: Physico-technical Institute, AN UkrSSR (Fiziko-tekhnicheskiy institute AN UkrSSR) B  
TITLE: Effects of programmed loading on the plasticity of beryllium monocrystals  
SOURCE: Fizika metallov i metallovedeniye, v. 21, no. 5, 1966, 774-778 14  
TOPIC TAGS: beryllium, metal property, metal crystal, crystal property, plasticity  
ABSTRACT: The effects of preliminary programmed loading at 400C on the subsequent mechanical properties of beryllium monocrystals at room temperature were investigated. One set of specimens (99.6% pure, with base plane oriented at 45° to the loading axis) was loaded (0, 5, 6, and 10 kg/mm<sup>2</sup>) and tested in compression. Another set (99.9% pure, base plane and <1010> direction coincided with loading axis) was loaded (0, 4.3, and 5 kg/mm<sup>2</sup>) and tested in tension. It was found that the room temperature yield stress  $\sigma_s$  and relative compressibility  $\epsilon$  were 9.6, 11.3, 11.0, and 9.8 kg/mm<sup>2</sup> and 10.7, 17.7, 24.7 and 11.2% respectively for the preloading conditions of the first set of specimens and 14.5, 16.1, and 12.4 kg/mm<sup>2</sup> and 29, 36, and 39.5% respectively for the second set. Elongation was 54, 53, and 64% respectively for the second set. X-ray diagrams of the preloaded monocrystals are also presented. Orig. art. has: 5 figures.  
SUB CODE: 11, 13/ SUBM DATE: 31May65/ ORIG REF: 006/ OTH REF: 006  
Card 1/1 MLP UDC: 539.37:546.45

Card 1/4

ACC NR: AM6030416

TABLE OF CONTENTS:

Part I. Review of Literature

Ch. I. Dislocation Description of Metal Plastic Deformation Processes -- 3

1. Plastic deformation as a result of migration of plastic dislocations -- 4
2. Deformation strengthening of metals -- 5
3. Mechanism of brittle failure of metal crystals -- 8

Ch. II. Deformation and Failure of Hexagonal Densely Packed Crystals -- 10

1. Mechanism of plastic deformation of hexagonal metal crystals ( $c/a < 1.633$ ) -- 10
2. Mechanism of beryllium deformation and failure -- 12
3. Beryllium brittleness -- 16

Part II. Investigation of Plasticity and Strength of Beryllium Single Crystals of Various Purity at 4.2—1000K Temperatures -- 19

Ch. III. Investigation Methods -- 19

1. Formation of large single crystals of beryllium -- 19

Card 2/4

ACC NR: AM6030416

2. Method of electric spark cutting of beryllium single crystals and preparation of specimens -- 22
  3. Mechanical tests of beryllium single crystals -- 26
  4. Method of investigation of the nature of slide and failure of beryllium single crystals, method of calculating the surface contour of the deformed crystal -- 27
- Conclusions -- 32

Ch. IV. Deformation of Beryllium Single Crystals by Compression -- 32

1. Mechanical characteristics of beryllium single crystals with the base plane at 45K angle towards the compression axis -- 32
  2. Nature of slide and failure of beryllium single crystals ( $\alpha = 45^\circ$ ), mostly at low temperatures -- 34
  3. Investigation of the surface contours of deformed specimens of 99.9%-pure beryllium single crystals -- 45
  4. Magnitude and temperature dependence of critical stresses of shift effect of purity -- 53
- Conclusions -- 56

Ch. V. Compression of beryllium single crystals along a hexagonal axis (0001) -- 57

1. High strength of beryllium single crystals at compression along the hexagonal axis in the 4.2—900K temperature range--57

Card 3/4

ACC NR: AM6030416

2. Pyramidal and base slide at compression of beryllium single crystals along hexagonal axis at 500—900K -- 64
  3. Anisotropy of beryllium single crystal strength -- 69
- Conclusions -- 71

Ch. VI. Temperature and Orientation Dependence of Slide and Failure of 99.9%-Pure Beryllium Single Crystals in Stretching -- 73

1. Mechanical characteristics, slide and failure of beryllium single crystals at 300—800K temperature ( $\alpha = 45^\circ$ ) -- 73
2. Orientation dependence of plasticity of beryllium single crystals in stretching -- 84

Conclusions -- 95

Deduction -- 95

References -- 98

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 045/ OTH REF: 070

Card 4/4



SHUBINA, A., vrach

Medical advice. Rab. 1 sial 36 no. 7:23 J1 '60.

(MIRA 13:10)

(Abortion)

ROZENFEL'D, Ye.L.; SHUBINA, A.I.

Phosphorylase of potato tuber. Biokhimiia 19 no.3:289-294  
My-Je '54. (MLBA 7:8)

1. Laboratoriya fiziologicheskoy khimii Akademii nauk SSSR, Moskva.  
(PHOSPHORYLASES, (POTATOES,  
potatoes) phosphorylase)

SHUBINA, A. I.

A/Cleavage of dextran by spleen extracts. R. L. Rosen-  
feld, A. I. Shubina and A. A. Kuznetsov. *Doklady Akad.  
Nauk S.S.R.* 104, 116-17 (1956). Bats from bull spleen  
are capable of attacking dextran, best at pH 4.8 (acetate  
buffer) and 4-7 mg./ml. concn. of the substrate. At pH 7  
or above no cleavage occurs. The cleavage is slow in the  
beginning and needs 48 hrs. to become appreciable (17-  
18%). The reaction can be followed by accumulation of  
reducing substances in the mixt. G. M. Kosolapoff

MD

(2)

SHUBINA, A.I.

Weeds on virgin and idle lands of Stalingrad Province. Bot.shur.  
43 no.12:1713-1719 D '58. (MIRA 11:12)

1. Stalingradskiy sel'skokhozyaystvennyy institut.  
(Stalingrad Province--Weeds)

ROZENFEL'D, Ye.L.; LUKOMSKAYA, I.S.; HUDAKOVA, N.K.; SHUBINA, A.I.

Study of  $\alpha$ -1,4 and  $\alpha$ -1,6-polyglycosidases in animal tissues.  
Biokhimiia 24 no.6:1047-1053 N-D '59. (MIRA 13:5)

1. Laboratory of Physiological Chemistry, Academy of Sciences  
of the U.S.S.R., Moscow.  
(CARBOHYDRASES metab.)

SHUBINA, A. V.

Dissertation: "The Influence of Certain Factors on the Phagocytic Capacity of Blood Leucocytes in an Organism." Cand Biol Sci, Moscow Technical Inst of the Fish Industry and Economy imeni A. I. Mikoyan, 23 Jun 54. (Vechernyaya Moskva, Moscow, 14 Jun 54)

SO: SUM 318, 23 Dec. 1954

USSR / General Problems of Pathology, Immunity.

U

Abs Jour: Ref Zhur-Biol., No 22, 1958, 102411.

Author : Shubina, A. V.

Inst : Not given.

Title : The Influence of a Pain Stimulus on Phagocytosis.

Orig Pub: Patol. fiziologiya i eksperim. terapiya, 1958, 2,  
No 1, 50.

Abstract: Pain stimulation of the skin of the paw of guinea pig was induced by an electric current from an induction coil. In weak pain stimulation, (distance between coils 1 cm) in the course of 1 min. phagocytosis (P) increased on the average by 67%. 20 min. after stimulation, P was still increased. In strong stimulation (coils drawn together, 5 min.) the guinea pigs lapsed into a shock-like state, P was decreased on the average by 36% and,

Card 1/2

*Lab. Animal Physiol. Moscow Tech. Inst.  
Fish Industry & Economy im. A. I. Mikoyan*

SHUBINA, A.V. (Moskva)

Effect of anaphylactic shock on phagocytosis. Pat.fiziol. i  
eksp.terap. 2 no.2:62 Mr-Apr '58 (MIRA 11:7)

1. Iz Laboratorii fiziologii zhivotnykh (zav. prof. E.V. Puchkov)  
Moskovskogo tekhnicheskogo instituta rybnoy promyshlennosti i kho-  
zyaystva imeni A.I. Mikoyana.

(PHAGOCYTOSIS,

eff. of exper. anaphylactic shock (Rus))

(ALLERGY, experimental

eff. of anaphylactic shock on phagocytosis (Rus))



SHUBINA, A.V.

Effect of certain factors on phagocytosis in fishes. Vop. ikht.  
no.13:163-169 '59. (MIRA 13:3)

1.Moskovskiy tekhnicheskoy institut rybnoy promyshlennosti i  
khozyaystva im. A.I. Mikoyana.  
(Fishes--Physiology) (Phagocytosis)

ALPATOV, V.V.; SHUBINA, A.V.

Micro-organisms and plants as test objects in the study of blood  
serum toxicity. Lab.delo 7 no.11:40-43 N '61. (MIRA 14:10)

1. Radiologicheskiy otdel Nauchno-issledovatel'skogo rentgeno-  
radiologicheskogo instituta.  
(SERUM)

SHUBINA, A.V.(Moskva)

Effect of some pharmacopoeial preparations on radiation  
sickness in an experiment. Med.rad. 7 no.11:83-85 N'62.

(MIRA 16:9)

(RADIATION SICKNESS) (MATERIA MEDICA, VEGETABLE)

27.24.00

39276

S/219/62/053/001/003/007

I015/I215

AUTHOR: Alpatov, V. V. and Shubina, A. V.

TITLE: The effect of drugs on blood serum toxicity acquired through ionizing radiation

PERIODICAL: Byulleten' eksperimental'noy biologii i meditsiny, v. 53, no. 1, 1962, 28-31

TEXT: The present investigation continues the study of Genes' observation that the blood serum of animals with radiation sickness, acquires toxicity, which is determined with the help of *Paramecium caudatum* as a test organism. Certain drugs (leucogen, caferid, batyl and selachyl alcohols) separately or combined, brought about an increase in the reproduction rate of paramecia. The experiments were carried out with the sera of dogs, rabbits and albino rats and then with sera of previously irradiated animals. The sera of the irradiated animals were more toxic to paramecia, and the administration of the drugs lowered the toxicity. The authors point out the prognostic value of this method although the response of the paramecia is not specific to radiation sickness. There are 2 tables and 1 figure.

ASSOCIATION: Radiologicheskiy otdel (zav.-prof. A. V. Kozlova) Gosudarstvenno nauchno-issledovatel'skogo rentgeno-radiologicheskogo instituta (Dir.—Prof. I. G. Lagunova) (Departement of radiology (Dir.—Prof. A. V. Kozlova) in the State Institute of Roentgenology and Radiology, Moscow (Dir.—Prof. I. G. Lagunova)

SUBMITTED: March 16, 1961

Card /11

SHUBINA, G.P.

Some moments of struggle between materialism and idealism  
in the theory of diagnosis. Trudy Khab. med. inst. 23 no.2;  
16-22 '62 (MIRA 16:12)

1. Iz kafedry marksizma-leninizma (zav. dotsent G.V.Kuzin)  
Khabarovskogo meditsinskogo instituta.

ARTYUSHIN, L.F.; SHUBINA, G.Ye.; ANTONOV, S.M.; KIRILLOV, N.I.; LEVITAN, A.Yu.; MIKOSHA, V.V.; PLUZHNIKOV, B.F.; IOFIS, Ye.A., kand.tekhn. nauk, red.; TELESHEV, A.N., red.; CHICHERIN, A.N., tekhn.red.

[Color photograph] TSvetnaya fotografiia. Pod red. E.A.Iofisa. Moskva, Gos.izd-vo "Iskusstvo," 1958. 208 p. (Biblioteka foto-liubitelia, no.12) (MIRA 12:4)

(Color photography)

ARTYUSHIN, L.F.; SHUBINA, G.Ye.; ANTONOV, S.M.; KIRILLOV, N.I.;  
LEVITAN, A.Yu.; MIKOSHA, V.V.; PLUZHNIKOV, B.F.; IOFIS,  
Ye.A., kand. tekhn.nauk, red.; FOMIN, A.A., red.; GORINA,  
V.A., tekhn. red.

[Color photography] TSvetanaia fotografiia. Izd.2., ispr. i  
dop. Pod red. E.A.Iofisa. Moskva, Iskusstvo, 1961. 228 p.  
(Biblioteka fotoliubitelia, no.13) (MIRA 16:5)  
(Color photography)

as well as noise, such as a matched filter, for example. The author attempts to esti-  
mation of the signal to a bandlimited

BUGLAY, B.M., doktor tekhn.nauk; PIRYATINSKIY, A.L., kand.khim.nauk; SHUBINA,  
I.I., inzh.; KORSHUN, L.L., inzh.

New materials used for finishing furniture. Der.prom. 7 no.9:1-5  
S '58. (MIRA 11:11)

(Wood finishing)



KORSHUN, L.L.; TRIFONOVA, T.V.; PIRYATINSKIY, A.L.; BUGLAY, B.M.; SHUBINA, I.I.

Fungicidal nitro varnishes based on oxyterpene resins. Der.prom.  
7 no.11:1-2 N '58. (MIRA 11:11)  
(Varnish and varnishing) (Fungicides)

DRYNOVA, I.A.; KORSHUN, L.L.; SHEINA, L.A.; SHUBINA, I.I.

Use of flat lacquers for furniture finishing. Der.prom. 10  
no.11:9-10 N '61. (MIRA 14:10)  
(Lacquers and lacquering) (Furniture industry)

SHUBINA, I.I., inzh.; BUGLAY, B.M., prof., rukovoditel' raboty

Permeability of furniture varnishes to infrared rays. Der. prom.  
12 no.6:5-7 Je '63. (MIRA 16:10)

1. Moskovskiy lesotekhnicheskij institut.

SHUBINA, I.T., Inzh.

Radiation drying of transparent varnish coatings. Der. prom.  
13 no.12:5-7 D '64 (MIRA 18:2)

1. Moskovskiy lesotekhnicheskii Institut.

BERKOVICH, M.; KHARCHEVNIKOVA, S.; SHUBINA, L.; SIDOROVA, L.;  
VOZNESENSKAYA, N.

Using mineral pigments in making building materials. Stroi. mat.  
4 no.4:33 Ap '58. (MIRA 11:5)  
(Pigments) (Building materials)

*SHUBINA, L.A.*

YANUS, R. I.; SHUBINA, L. A.; SOKOLOV, A.D.

Methodology of Magnetic Testing of Whole Sheets of Electrotechnical Steels.

Tests for Losses in an Open Magnetic Chain.

ZhTF 3, 1703, 1938

*SHUBINA L.A.*

YANUS, A. I.; KHAILILEYEV, P. A. ; SHUBINA, L. A.

Diagram for new Hyper-Sensitive Plant Control of Rod and Sheet Materials by  
Magnetic Permeability.

ZhTF 11, 936, 1941

SHUBINA, L. A.

The Study of Crystallographic Magnetic Anisotropy of Transformer Steel.

Ural State University imeni Gorkiy, Sverdlovsk, 1946.

So: U-1837, 14 April 52.



USSR/Physics

Anisotropy  
Magnetism

Sep/Oct 1967

"The Dependence of the Crystallographic Magnetic Anisotropy of Poly-crystal Ferroceramics on Temperature,"  
L. A. Shubina, Institute of Physics of Metals, Ural Branch, Academy of Sciences of the USSR, 6 pp

"Izv Ak Nauk, Ser Fizich" Vol II, No 5

Gives a general description of the theories and principles which uphold this dependence. The main purpose is to explain the crystallographic magnetic anisotropy of poly-crystal ferroceramics. Discusses the apparatus and the selection of samples for the experiments.

10

36190

USSR/Physics (Contd)

Sep/Oct 1967

Describes formulas which were used for the calculations and the data obtained as a result of the experiments.

10

36190

SHUBINA, L. A.

SHUBINA, L. A.

PA 58778

USSR/Metals  
Crystallography  
Iron Silicide

Aug 1947

"The Temperature Function of the Crystallographic Magnetic Anisotropy in Iron Silicide Crystals," L. A. Shubina, Inst Metal Physics, Ural Br, Acad Sci USSR, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 5

Describes series of experiments, carried out with aid of revolving magnetometer, which determined crystallographic orientation of specimens by X-ray and magnetic methods, and studied temperature component. Submitted by Academician M. A. Leontovich, 3 Mar 1947.

58778

USSR/Physics  
Alloys, Magnetic  
Magnetization

Jan 49

PA 24/49T113  
"The Magnetic Structure of Highly Coercive Alloys  
I, Some Peculiarities of Magnetization Curves and  
Hysteresis Loops in Highly Coercive Alloys of  
Alnico and Vikalloy," I. A. Shubina, Ya. S. Shur,  
Inst Phys of Metals, Ural Affiliate, Acad Sci  
USSR, 7 pp

"Zhur Tekh Fiz" Vol XIX, No 1

Discusses study and explanation of the path of  
magnetization curves, and the hysteresis loop of  
magnetically anisotropic high-coercive alloys in  
relation to the character of their magnetic texture.

SHUBINA, I. A.

24/49T113

USSR/Electricity - Literature

Jun 53

"New Books on Electricity, Electrical Engineering,  
and Electric Power Engineering"  
Elektrichestvo, No 6, p 96

Lists 7 titles published in USSR in 1952, 8 published in 1953 (one a translation), including the following: (1) V.M. Shlyandin, "Elements of Automatics and Telemechanics" ["Elementy avtomatiki i telemekhaniki"/], 436 pp, 1952; (2) "Ferromagnetic Resonance and the Behavior of Ferromagnetics in Changing Magnetic Fields" ["Ferromagnitnyy

268r65

resonans i povedeniye ferromagnitkov v peremennyykh magnitnykh pol'yakh"/], a symposium of articles translated by L.A. Shubina, edited by S.V. Vonsovsky, 350 pp, 1953.

268r65

SHUBINA L.A.

VONSOVSKIY, S.V., redaktor; SHUBINA, L.A. [translator]; TELESNIN, N.L.,  
redaktor; NIKIFOROVA, A.N., tekhnicheskiy redaktor.

[Elasticity and anelasticity of metals; collection of articles.  
Uprugost' i neuprugost' metallov; sbornik. Perevod L.A. Shubinoi.  
Moskva, Izd-vo inostrannoi lit-ry, 1954. 396 p. [Microfilm]  
(Elasticity) (Metals) (MLRA 7:11)

SHUBINA, L.A. [translator]; VONSOVSKIY, S.V., redaktor; TELESNIN, N.L.,  
redaktor; GERASIMOVA, Ye.S., tekhnicheskii redaktor

[Antiferromagnetism; a collection of articles. Translations]  
Antiferromagnetizm; sbornik statei. Perevod L.A.Shubinoi. Pod  
red. S.V.Vonsovskogo. Moskva, Izd-vo inostrannoi lit-ry, 1956.  
487 p. (MIRA 10:3)

(Ferromagnetism)

SHUBINA, L. A.

7  
4E2C

Strained  
not

The Influence of Elastic Stresses and Thermomechanical Treatment on the Magnetic Properties of High-Coercivity [Iron-Base] Alloys. Ya. S. Shur, M. G. Lushinskaya, and L. A. Shubina (Fizika Metallov i Metallovedenie, 1956, 2, 47-49, 500). [In Russian]. A letter. Experiments on Fe-Co-W and Fe-Mn alloys show that: small stresses do not change the relative proportions of ferromagnetic and non-ferromagnetic phases; their only effect is to increase the anisotropy in individual domains, i.e. to increase  $H_c$  (coercive field). At the same time small stresses improve the magnetic texture, i.e. increase  $B_r$  (remanent magnetization). Large stresses convert ferromagnetic phases into non-ferromagnetic.

3

4E2C

i.e. reduce  $H_c$  and  $B_r$ . As an example of the use of thermomech. treatment S. et al. quote the improvement of  $H_c$  from 400-450 Oe. before treatment to 500-550 Oe. after, and of  $(BH)_{max}$  from 2-3 before to  $3-4 \times 10^6$  gauss.Oe. after. The best magnets improved by this process have  $H_c = 570$

SENKEVICH, O.V.; DOLETSKAYA, N.N.; KURCHENKO, V.F.; SEREBRENNAYA, B.M.;  
SILAKOVA, I.R.; TATARIN, P.T.; SHUBINA, L.A.; NADEINSKAYA, A.A.,  
tekhn.red.

[Physical and chemical methods of analyzing mine methane] Fiziko-  
khimicheskie metody analiza rudnichnogo vozdukha. Pod obshchei  
red. O.V.Senkevich. Moskva, Ugletekhizdat, 1957. 425 p.  
(MIRA 10:12)

(Methane)

(Mine gases)



SHUBINA, L.A.

Influence of elastic stresses on magnetic properties of  
Vicaloy. *Phys. S. Shur, M. G. Lushinskaya, and L. A. Shubina. Fiz. Metal. i Metalloved. 4, 54-9(1957).*—High  
coercivity of alloys with single-domain magnetic structure  
depends on the presence of pronounced magnetic anisotropy  
which can be of varied nature. One of the methods for its  
creating is unilateral external stressing, and this method  
was used in this work in the shape of elastic tension and tor-  
sion. Cold reduced 0.3 mm. diam. wires drawn 91% made  
of V 12, Co 52, Fe 36% alloy were tempered for 30 min. at  
500-670° and their magnetic characteristics measured under  
tension of up to 80 kg./sq.mm. or torsion up to 8°. These  
tests were repeated on 0.1 mm. diam. wires cold reduced 98%  
with loading up to 280 kg./sq.mm. The curves presented  
show that tension increases coercivity several times and  
raises residual induction, though torsion, increasing the  
coercivity, lowers the residual induction, in both cases being  
caused by the increased anisotropy of single-domain forma-  
tion at the expense of stress anisotropy. I. D. Gat.

4  
4E2C-1

file  
MT

SHUR, Ya.S.; JUZHINSKAYA, M.G.; SHUBINA, L.A.

Thermomechanical treatment of vicalloy. Fiz. met. i metalloved.  
4 no.1:60-69 '57. (MLRA 10:6)

1. Institut fiziki metallov Ural'skogo filiala Akademii nauk SSSR.  
(Vicalloy--Metallurgy)

*Shubina, L. A.*  
AUTHORS: Shur, Ya. S., Luzhinskaya, M. G., Shubina, L. A. 48-9-14/26

TITLE: Note on the Influence of Elastic Stress and of a Combined Heat and Mechanical Treatment on the Magnetic Properties of Highly Coercive Alloys (Vliyaniye uprugikh napryazheniy i termomekhanicheskoy obrabotki na magnitnyye svoystva vysokokoertsitivnykh splavov).

PERIODICAL: Izvestiya AN SSSR Seriya Fizicheskaya, 1957, Vol. 21, Nr 9, pp. 1275-1279 (USSR.).

ABSTRACT: In this paper the influence of elastic stress (dilatation and torsion) and of a combined heat and mechanical treatment on the magnetic properties of some highly coercitive alloys was investigated. The combined heat and mechanical treatment consisted of imposing a dilating stress on the samples during tempering, under which conditions that crystal texture is formed, which corresponds to the highly coercitive state. It is shown, that the elastic stress and the heat and mechanical treatment have an essential influence on the magnetic properties of some highly coercitive alloys. These effects permit to increase the magnitude of  $H_c$  (coercitive force and  $(BH)_{max}$  (maximum magnetic energy) of a number of alloys. For example, the value of  $H_c$

Card 1/2 can be raised by 25 % and that of  $(BH)_{max}$  by 40 % in the case of an

SHUBINA, L.A., [translator]; VONSOVSKIY, S.V., red.; NAKHIMSON, I.G.,  
red.; GRIBOVA, M.P., tekhn.red.

[Magnetic structure of ferromagnetic materials] Magnitnais  
struktura ferromagnetikov; sbornik statei. Pod red. S.V.  
Vonsovskogo. Moskva, Izd-vo inostr.lit-ry, 1959. 514 p.  
(MIRA 14:1)

(Ferromagnetism)

ACC NR: AT7003860 (A) SOURCE CODE: UR/3241/65/002/000/0116/0120

AUTHOR: Shubin, Ye. M. (Candidate of technical sciences); Kuz'mina, V. A.;  
Shubina, L. N.

ORG: none

TITLE: Defining the production technology of cheese paste from buttermilk

SOURCE: Krasnodar. Nauchno-issledovatel'skiy institut pishchevoy promyshlennosti. Trudy, v. 2, 1965, 116-120

TOPIC TAGS: food technology, processed animal product, food product machinery

ABSTRACT: On the basis of previous information and the results of laboratory tests, the Tikhoretsk cheese factory, which is equipped with a special production line for condensed buttermilk milk products, started to produce experimentally cheese paste from condensed buttermilk. The results of this experiment are presented in detail in the original article. Tests verified and improved the composition of the raw material for making cheese paste, the basic characteristics of

Card 1/2

ACC NR: AT7003860

the finished product, the cooling conditions and the preservation qualities. The cheese paste produced was found to satisfy all requirements of quality and taste. The technical specifications instructions for manufacture and cost estimates for the cheese paste were determined and approved. The Tikhoretsk cheese factory, is presently equipped with special machinery to produce condensed buttermilk products including cheese paste. The participation of the Scientific associate I. G. Lopatina and N. I. Seredich in the study is acknowledged. Orig. art. has: 1 figure and 4 tables. [GC]

SUB CODE: 06 /SUBM DATE: none/ORIG REF: 004/

Card 2/2

URMANOVA, Kh. U.; SHUBINA, L.N.

Anatomicomorphological changes in cotton seedlings caused by ethyl  
mercury phosphate and ethyl mercury chloride. Izv. AN Uz.SSR, Ser.  
biol. nauk no. 3:45-50 '57. (MIRA 11:8)

(Cotton growing)  
(Ethyl mercury phosphate)  
(Ethyl mercury chloride)

SHUBINA, L. N.

Interrelation between senescence and reproduction of organs and tissues  
in trees and subshrubs under conditions prevailing in Central Asia.  
Uzb. biol. zhur. no.2:11-18 '53. (MIRA 11:10)

1. Biologo-pochvennyy fakul'tet Sredneaziatskogo gosudarstvennogo  
universiteta.

(Soviet Central Asia--Desert flora)

(Growth (Plants))



SOV/58-59-7-16080

Translation from: Referativnyy Zhurnal Fizika, 1959, Nr 7, p 205 (USSR)

AUTHOR: Klement'yev, F.M., Shubina, L.N.

TITLE: On the Mutual Synchronization of Two Coupled Oscillators<sup>21</sup> at Very High Frequencies

PERIODICAL: Tr. Sibirsk. fiz.-tekhn. in-ta, 1958, Nr 36, pp 393 - 398 ✓

ABSTRACT: The authors examine the steady-state operation of two coupled reflex-klystron oscillators. Using Teodorchik's method, they derive a system of equations for determining steady amplitudes and synchronous frequencies. This system is solved for the optimum transit angles of electrons in a tube when the induced current has only a real component. In this case the mutual synchronization of reflex klystrons is similar to the synchronization of low-frequency oscillators. A qualitative analysis is made of the case of nonoptimum values of the transit angle.

L.I.

Card 1/1

CHUZHOVA, Z.P.; SHUBINA, L.N.

Microbiological processes in butter made with the continuous method.  
Izv.vys.ucheb.zav.; pishch.tekh. no.5:37-42 '63. (MIRA 16:12)

1. Tsentral'nyy nauchno-issledovatel'skiy institut maslodel'noy  
i syrodel'noy promyshlennosti, mikrobiologicheskaya laboratoriya.

SHUBINA, L.S.

Productivity of lavender in the Crimea. Zemledelie 26  
no.3:60 '64. (MIRA 17:4)

1. Akademiya nauk Belorusskoy SSR.

CHUZHOVA, Z.P.; SHUBINA, L.N.; ZALASHKO, M.V.; MAKAR'INA, N.V.

Physiological and biochemical characteristics of aroma-producing  
*Streptococcus diacetylactis* cultures. Mikrobiologiya 33 no.3:522-  
527 My-Je '64. (MIRA 18:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut maslochel'noy  
i syrochel'noy promyshlennosti. Submitted January 8, 1963.

NAGORNAYA, L.L.; KILIMOV, A.P.; MALKES, L.Ya.; SHUBINA, L.V.;  
TIMCHENKO, A.I.

Plastic scintillators with additions of 1,2-diarylethylene.  
Prib.i tekhn.eksp. no.1:34-36 Ja-F '60. (MIRA 13:6)

1. Khar'kovskiy filial Vsesoyuznogo nauchno-issledovatel'skogo  
instituta khimicheskikh reaktivov.  
(Scintillation counters)

MALKES, L.Ya.; SHUBINA, L.V.

Synthesis of some new azines. Zhur.ob.khim. 31 no.10:3402-  
3406 0 '61. (MIRA 14:10)

1. Khar'kovskiy filial Vsesoyuznogo nauchno-issledovatel'skogo  
instituta khimicheskikh reaktivov.  
(Azines)

NAGORNAYA, L.L.; MALKES, L.Ya.; SHUBINA, L.V.

Optical study of certain 1,2-diaryl-substituted of ethylene  
in polystyrene. Opt. i spektr. 12 no.1:117-120 Ja '62. (MIRA 15:2)  
(Ethylene—Spectra)  
(Styrene—Spectra)

NAGORNAYA, L.L.; MALKES, L.Ya.; SHUBINA, L.V.

Optical study of 1,2-diaryl-substituted derivatives of ethylene  
in liquid solutions. Opt.i spektr. 12 no.5:644-646 My '62.  
(MIRA 15:5)

(Ethylene--Optical properties)



MALKES, L.Ya.; SHUBINA, L.V.

Synthesis of some 1,2-substituted ethylene with an  $\alpha$ -naphthyl  
group. Zhur. ob. khim. 32 no.1:287-290 Ja '62. (MIRA 15:2)

1. Khar'kovskiy filial Vsesoyuznogo nauchno-issledovatel'skogo  
instituta khimicheskikh reaktivov.  
(Ethylene)

S/079/62/032/005/003/009  
D204/D307

AUTHORS: Malkes, L.Ya., and Shubina, I.V.

TITLE: Synthesis of some 1,2 - diaryl substituted ethylenes

PERIODICAL: Zhurnal obshchey khimii, v. 32, no. 5, 1962, 1542-1544

TEXT: In continuation of earlier work the authors prepared I: 1,2-di-( $\beta$ -naphthyl) ethylene; II: 1-( $\beta$ -naphthyl)-2-(4-biphenyl) ethylene, and III: 1-phenyl-2-(4-biphenyl)ethylene, by the reaction  $R-CH = N-N = CH - R' \xrightarrow{\text{heat}} R-CH = CH - R' + N_2$ , in search for effective

scintillating materials. Compound II is new. The azines were decomposed by heating in steel, sealed apparatus, at 280 - 310°C over 45 - 50 min. for I, 270 - 300°C over ~25 min. for II, and 295 - 305°C over 40 - 50 min. for III. The yields for I, II and III were 30, 25.5 and 11 % respectively and the m.p.'s were: I - 235°C, II - 261 - 262°C, III - 224°C. The absorption spectrum of II was measured, in heptane solution, in the ~200 - 400 m $\mu$  region, to characterize the compound. There is 1 figure.

SUBMITTED: May 9, 1961

Card 1/1

MALKES, L.Ya.; SHUBINA, L.V.

Synthesis of some 1,2-diaryl-substituted ethylenes. Zhur.ob.khim.  
32 no.5:1542-1544 My '62. (MIRA 15:5)  
(Ethylene)

L 9862-63

ACCESSION NR: AP3001352

EWf(j)/EPF(c)/EWT(m)/BDS--ASD/ESD-3--Pc-4/Pr-4--RM/WW/MAY/JFW  
S/0048/63/021/006/0748/0753

7

AUTHOR: Nagornaya, L. L.; Nurmukhametov, R. N.; Malkes, L. Ya.; Shubina, L. V.

TITLE: Luminescence of naphthyl and anthryl derivatives of ethylene [Report of the Eleventh Conference on Luminescence held in Minsk from 10 to 15 September 1962]

SOURCE: AN SSSR. Izv. Seriya fizicheskaya, v. 27, no. 6, 1963, 748-753

TOPIC TAGS: ethylene derivative scintillators, arylethylenes, fluorescence quenching by UV

ABSTRACT: Some aryl derivatives of ethylene are known to be efficient luminophors and are used for the preparation of crystal and plastic scintillators. Increase of the pi-electron system conjugated with the ethylene grouping has been reported to increase the luminescence efficiency. Accordingly, the authors investigated the effect of alpha-naphthyl and 9-anthryl radicals on the luminescence of arylethylenes and made an attempt to elucidate the nature of the photochemical processes involved. There were obtained the luminescence spectra at 20°C and

Card 1/3

L 9862-63

ACCESSION NR: AP3001352

77°K of crystalline powders and different solutions of 1,2-di(alpha-naphthyl)ethylene, 1-phenyl-2(9-anthryl)ethylene, 1-(alpha-naphthyl)-2-(9-anthryl)ethylene and two stereoisomers of dianthrylethylene. Also the influence of UV irradiation on the stability and optical characteristics of the specimens was studied. The spectra are described and in part reproduced in the figures. The absorption and fluorescence spectra of the first compound in heptane and polystyrene at 20°C are reminiscent of the spectra of stilbene, but shifted somewhat to the red side. The fluorescence of the compounds decreases with time under UV irradiation. It is hypothesized that the decrease is connected with trans-cis isomeric photo-transformation. The relatively low scintillation yield of the investigated arylethylenes in solutions is explained by enhancement of nonradiative processes owing to occurrence of hindered rotations and the associated process of photostereoisomerization. In the solid phase these processes are inhibited and the fluorescence yields and scintillation efficiencies increase accordingly. Orig. art. has: 5 figures and 1 table.

ASSOCIATION: none

Card 2/3

L 41587-65 EWT(m)/EPF(c)/EWP(j)/T Pc-4/Pr-4 RM  
 S/0366/65/001/002/9347/0348  
 ACCESSION NR: AP5009020

AUTHORS: Shubina, L. V.; Malkes, L. Ya.

TITLE: New synthesis of 1,4-distyrylbenzene

SOURCE: Zhurnal organicheskoy khimii, v. 1, no. 2, 1965, 347-348

TOPIC TAGS: benzene, styrene, isomeric transition, acetic acid, dicarboxylic acid

ABSTRACT: The synthesis of 1,4-distyrylbenzene was obtained from the following

reaction  $2C_6H_5CH_2COOH + OHCC_6H_4CHO \xrightarrow{H_2O} C_6H_5CH=CHC_6H_4CH=CC_6H_5 \xrightarrow{-CO_2}$

$\rightarrow C_6H_5CH=CHC_6H_4CH=CHC_6H_5$

As a result of this reaction, a cis-cis-isomer was obtained and was subsequently isomerized to a trans-trans form. First, a terephthalic aldehyde is obtained from urotropin, xylylenedibromide, and acetic acid. To this are added phenylacetic acid, triethylamine, and acetic anhydride to produce 1,4-distyrylbenzene- $\alpha, \alpha'$ -dicarboxylic acid. Orig. art. has: 1 formula.

ASSOCIATION: none

Card 1/2

L 63275-65 ENT(m) JAJ/RM

ACCESSION NR: AP5015124

UR/0366/65/001/006/1040/1043  
547.538

AUTHORS: Shubina, L. V.; Malkes, L. Ya.

1D  
B

TITLE: Synthesis of bifunctional derivatives of 1,4-distyrylbenzene

SOURCE: Zhurnal organicheskoy khimii, v. 1, no. 6, 1965, 1040-1043

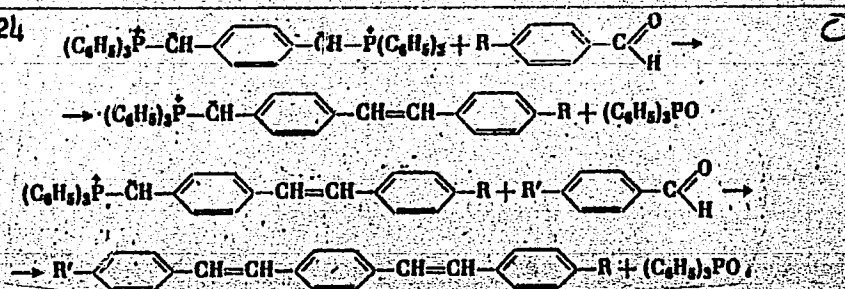
TOPIC TAGS: synthesis, styrylbenzene, aromatic hydrocarbon

ABSTRACT: Several bifunctional derivatives of 1,4-distyrylbenzene were synthesized in order to study the correlation between the physical and chemical properties of such compounds. The following compounds were synthesized: p-nitro-p'-amino-mm,m'-dichloro-,mm,m'-dimethoxy-, o,o'-dichloro-, o,o'-dimethoxy-, and o,o'-dinitro-1,4-distyrylbenzene. A table of physical properties of the above compounds is given. It is suggested that the formation of bifunctional derivatives of 1,4-distyrylbenzene proceeds by a Witting type of reaction, as shown by

Card 1/2

L 63275-65

ACCESSION NR: AP5015124



Orig. art. has: 1 table and 1 illustration.

ASSOCIATION: none

SUBMITTED: 24Apr64

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NO REF SOV: 002

OTHER: 004

Card 2/2



SHUBINA, L.V.; MALKES, I.Ya.

Synthesis of 1,2 and 1,3-distyrylbenzenes. Zhur.org.khim. 1  
no.3:497-499 Mr '65. (MIRA 18:4)

MALKIN, I.Ya.; CHUBINA, L.V.; NAGORNAYA, L.L.

Synthesis of 9-anthryl derivatives of ethylene. Zhur.org.khim.  
1 no.3:587-589 Mr '65. (MIRA 18:4)

SHUBINA, L.V.; MALKES, L.Ya.

Synthesis of difunctional derivatives of 1,4-distyrylbenzene. Zhur.  
org. khim. 1 no.6:1040-1043 Je '65. (MIRA 18:7)

LUTSKIY, A.Ye.; LITVINENKO, L.M.; SHUBINA, L.V.; MAL'KES, L.Ya.; CHESHIKO, A.S.;  
GOL'BERKOVA, A.S.; KANEVSKAYA, Z.M.

Interaction of substituents through aromatic rings linked  
by a bridge group. Zhur.ob.khim. 35 no.12:2083-2090 D '65.  
(MIRA 19:1)

1. Khar'kovskiy politekhnicheskii institut im. V.I.Lenina.  
Submitted May 28, 1964.

TSIRULIN, Ya.A.; SMOLOVSKAYA, T.I.; NIKULINA, R.A.; MAGORNAYA, L.L.;  
MALESE, L. Ya.; SHUBINA, L.V.

Plastic scintillator with a light yield proportional to the  
energy of the outer electrons. Zhur. prikl. spekt. 3 no. 6:  
571-573 D '65 (MIRA 19:1)

1. Submitted November 2, 1964.

L 15958-66 EWT(m)/EWP(j)/T WW/RM  
ACC NR: AP6001485 SOURCE CODE: UR/0368/65/003/006/0571/0573

AUTHOR: Tsirlin, Yu. A.; Sokolovskaya, T. I.; Nikulina, R. A.; Nagornaya, L. L.  
Malkes, L. Ya.; Shubina, L. V. 52  
15445 B

ORG: None

TITLE: Plastic scintillator with a light yield proportional to the energy of  
outer electrons

SOURCE: Zhurnal prikladnoy spektroskopii, v. 3, no. 6, 1965, 571-573

TOPIC TAGS: scintillation, polystyrene, vinyl plastic, electron emission

ABSTRACT: Earlier studies of plastic scintillators investigated the relationship between the light yield and the energy of inner (I. M. Rozman et al., PTE, 6, 27, 1960) and outer (Yu. A. Tsirlin et al., ZhPS, 3, 156, 1965) electrons. The present study attempts to establish the amount of additives (PBE, BPO, or PPP) which will result in the highest degree of proportionality defined as  $(L/E)_{30 \text{ kev}} / (L/E)_{70 \text{ kev}}$ . 100 (L - light yield, E - incident energy). The polystyrene + 1% PBE showed the highest light yield in the 0-20 kev region and it was, at the same time, proportional to the energy of the outer electrons. It is thus very convenient for the detection of low energy electrons. The other base tested was polyvinylxylene. 15  
Card 1/2 UDC: 535.35

OSTAPENKO, K.A.; KOROPOV, V.M.; POLEKHIN, F.S.; SHUBINA, M.G.; KARYAGIN, V.I.;  
ZINCHENKO, A.V.; ROSTOMASHVILI, A.; GOGILASHVILI, V.; KUPASHVILI, S.;  
SIKORSKIY, A.

Information and brief news. Veterinariia 41 no.2:119-126 F '65.  
(MIFA 18:3)

SHATALOV, P.I., prof.; SHOBINA, M.G., dissent

Anaphylaxis in cows after the administration of pregnant mare's  
serum and blood. Veterinariia 42 no.5:87-89. My '65.  
(MIRA 18:6)

1. Moskovskaya veterinarnaya akademiya.



BA

Determination of sulphur dyes on the fibre. N. A. Shabina  
(Tekst. prom., 1940, No. 10, 41—42).—Three g. of finely divided dyed  
material is treated with 5—6 ml. of conc.  $H_2SO_4$  for 2—3 min.; the  
product is transferred into 300 ml. of distilled  $H_2O$  at 70—80°. The  
pptd. dye is filtered off, washed, neutralized with  $NaOH$ , and  
reduced with 5 ml. of 10%  $Na_2S$  on the water-bath for 15—20  
min. The reduced dyestuff is estimated colorimetrically.  
E. B. URAYOV.

USSR /Chemical Technology. Chemical Products  
and Their Application

I-19

Dyeing and chemical treatment of textiles

Abs Jour: Referat Zhur - Khimiya, No 9, 1957, 32200

Author : Yushkov N.A., Sladkopevtseva G. Ye., Shubina N.A.,  
Shumarina A.V.

Title : Decreasing the Expenditure of Sodium Sulfide in  
Dyeing Cotton.

Orig Pub: Tekstil'naya prom-st', 1956, No 7, 37-39

Abstract: The formulas for dyeing cotton with sulfur dyes  
(D) have been revised in order to decrease the  
expenditure of D and  $\text{Na}_2\text{S}$ . The optimal amounts  
of  $\text{Na}_2\text{S}$  have been determined for dyeing with  
Sulfur Black, Brown Zh, Blue Z and their mixtures,

Card 1/3

USSR /Chemical Technology. Chemical Products  
and Their Application

I-19

Dyeing and chemical treatment of textiles

Abs Jour: Referat Zhur - Khimiya, No 9, 1957, 32200

in continuous operation apparatus and centrifugal apparatus, under conditions approximating the full-scale operations. It was found that the dosage of  $\text{Na}_2\text{S}$  is determined by its concentration (in g/liter) in the dye bath. This concentration is apparently about the same with the different D and amounts to approximately 4-6 g/liter of 100%  $\text{Na}_2\text{S}$ . It does not depend on the concentration of the D, within the range of the usual concentrations of industrial dye baths (10-20 g/liter). The alkali content, with a concentration of  $\text{Na}_2\text{S}$  of 4-5 g/liter, must be not less than 2 g/liter NaOH (100%). For

Card 2/3

USSR /Chemical Technology. Chemical Products  
and Their Application

I-19

Dyeing and chemical treatment of textiles

Abs Jour: Referat Zhur - Khimiya, No 9, 1957, 32200

continuous dyeing apparatus it is not expedient to use NaCl with a content of thiosulfates, in the dye bath, amounting to 25-30 g/liter. The new formulas increase exhaustion of the D, decrease its losses during rinsing and, consequently, result in large savings (about 30%) of D and Na<sub>2</sub>S.

Card 3/3

SHUBINA, N.A.; DAN'SHINA, M.I.

Dyeing practices for viscose staple fiber. Tekst.prom. 17 no.2:64-  
65 F '57. (MLRA 10:2)

1. Zaveduyushchiy khimicheskoy laboratoriyey Ivanovskogo melanzhe-  
vogo kombinata imeni Frolova (for Shubina). 2. Nachal'nik khlopko-  
krasil'nogo tsekha Ivanovskogo melanzhevogo kombinata imeni Frolova  
(for Dan'shina).

(Dyes and dyeing--Rayon)

SHUBINA, N.A.; SLADKOPEVTSEVA, G.Ye., khimik.

Finishing staple suiting. Tekst. prom. 18 no.1:50-52 Je '58.  
(MIRA 11:2)

1. Zaveduyushchaya khimicheskoy laboratoriyey Ivanovskogo melan-  
zhevogo kombinata.

(Textile finishing)

SHUBINA, N.A. ; SLADKOPEVTSEVA, G.Ye., khimik

Improving the spinning properties of dyed cotton. Tekst. prom.  
18 no.8:56-58 Ag '58. (MIRA 11:10)

1.Zaveduyushchiy khimicheskoy laboratoriy Ivanovskogo melanzhe-  
vogo kombinata (for Shubina). 2.Khimicheskaya laboratoriya Ivanovskogo  
melanzhevogo kombinata (for Sladkopevtseva).  
(Cotton spinning)

SHUBINA, N.A.

Vat dyeing with use of ronalite. Tekst.prom. 18 no.12:53-54 D '58.  
(MIRA 11:12)

1. Zaveduyushchaya khimicheskoy laboratoriy Ivanovskogo melanzhevogo  
kombinata. (Dyes and dyeing--Cotton) (Sodium formaldehydesulfoxylate)



SHUBINA, N.A.

New catalyst for the treatment of fabrics with "carbamol."  
Tekst.prom. 20 no.5:65-66 My '60. (MIRA 13:8)

1. Zaveduyushchiy khimicheskoy laboratoriyey melanzhevogo  
kombinata imeni K.I.Frolova.  
(Textile finishing)

SHUBINA, N.A.

Efficient dyeing method. Tekst. prom. 21 no. 4:73-74 Ap '61.  
(MIRA 14:7)

1. Zaveduyushchaya khimicheskoy laboratoriyey melanzhevogo kombinata  
imeni Frolova.

(Dyes and dyeing—Cotton)

KATS, Ya.G.; SHUBINA, N.G.

Age of the Upper Coal-Bearing series of the Chulym-Serezhskiy and Bogotol'sk coal-bearing regions. Izv.vys.ucheb.zav.; geol. i razv. 6 no.5:19-24 My '63. (MIRA 18:4)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

SHUBINA, N.K.

Differential diagnosis between psychopathy with paranoid development  
of the personality and schizophrenia. *Prak.sudebno-psikh.ekspert.* no.34  
23.3. '61. (MIRA 17:10)